CLAIMS

What is claimed is:

1. A method for programming a mobile telephone over the air within a mobile telephone communication network, said mobile telephone communication network includes an over-the-air function, a customer service center, a mobile switching center, a base station controller, and a plurality of base transceiver stations, said method comprising the steps of:

sending a request over the air to a mobile telephone by one of said plurality of base transceiver stations within said mobile telephone communication network to interrogate said mobile telephone's protocol capability; and

in response to a detection of said request, responding with a protocol capability response message over the air by said mobile telephone to said one of said plurality of base transceiver stations, wherein said protocol capability response message includes a BAND_MODE_CAP field describing band and mode capability information of said mobile telephone.

2. The method according to Claim 1, wherein said BAND_MODE_CAP field further includes an analog cellular band subfield, a digital cellular band subfield, and a digital personal communication service band subfield.

3. The method according to Claim 1, wherein said BAND_MODE_CAP field is utilized to generate a preferred roaming list and a number assignment module indicator block that are specific to said mobile telephone's capabilities.

4. The method according to Claim 1, wherein said protocol capability response message further includes a NUM_SO field describing a number of service options available to said mobile telephone.

5. The method according to Claim 4, wherein said NUM_SO field further includes at least one SERVICE_OPTION field, wherein each SERVICE_OPTION field indicates a service option supported by said mobile telephone.

6. The method according to Claim 5, wherein said at least one SERVICE_OPTION field is utilized to initiate an appropriate provisioning of said mobile telephone.

7. The method according to Claim 5, wherein data from said BAND_MODE-CAP field and from said at least one SERVICE_OPTION field are sent to said customer service center for a provisioning of a home location register.

8. The method according to Claim 1, wherein said mobile telephone communication network may be an advanced mobile phone service or a code-division multiple access mobile telephone communication network.

9. A mobile telephone communication system for programming a mobile telephone over the air within a mobile telephone communication network, said mobile telephone communication network includes an over-the-air function, a customer service center, a mobile switching center, a base station controller, and a plurality of base transceiver stations, said mobile telephone communication system comprising:

means for sending a request over the air to a mobile telephone within said mobile telephone communication network to interrogate said mobile telephone's protocol capability; and

means for receiving a protocol capability response message over the air sent by said mobile telephone, in response to a detection of said request, to said one of said plurality of base transceiver stations, wherein said protocol capability response message includes a BAND_MODE_CAP field describing band and mode capability information of said mobile telephone.

10. The mobile telephone communication system according to Claim 9, wherein said BAND_MODE_CAP field further includes an analog cellular band subfield, a digital cellular band subfield, and a digital personal communication service band subfield.

11. The mobile telephone communication system according to Claim 9, wherein said BAND_MODE_CAP field is utilized to generate a preferred roaming list and a number assignment module indicator block that are specific to said mobile telephone's capabilities.

12. The mobile telephone communication system according to Claim 9, wherein said protocol capability response message further includes a NUM_SO field describing a number of service options available to said mobile telephone.

13. The mobile telephone communication system according to Claim 12, wherein said NUM_SO field further includes at least one SERVICE_OPTION field, wherein each SERVICE_OPTION field indicates a service option supported by said mobile telephone.

14. The mobile telephone communication system according to Claim 13, wherein said at least one SERVICE_OPTION field is utilized to initiate an appropriate provisioning of said mobile telephone.

15. The mobile telephone communication system according to Claim 13, wherein data from said BAND_MODE-CAP field and from said at least one SERVICE_OPTION field are sent to said customer service center for a provisioning of a home location register.

16. The mobile telephone communication system according to Claim 9, wherein said mobile telephone communication network is a code-division multiple access mobile telephone communication network.

17. A mobile telephone within a mobile telephone communication network, said mobile telephone communication network includes an over-the-air function, a customer service center, a mobile switching center, a base station controller, and a plurality of base transceiver stations, said mobile telephone comprising:

means for receiving a request over the air from one of said plurality of base transceiver stations within said mobile telephone communication network to interrogate said mobile telephone's protocol capability; and

means for sending a protocol capability response message over the air, in response to a detection of said request, to said one of said plurality of base transceiver stations, wherein said protocol capability response message includes a BAND_MODE_CAP field describing band and mode capability information of said mobile telephone.

18. The mobile telephone according to Claim 17, wherein said BAND_MODE_CAP field further includes an analog cellular band subfield, a digital cellular band subfield, and a digital personal communication service band subfield.

19. The mobile telephone according to Claim 17, wherein said protocol capability response message further includes a NUM_SO field describing a number of service options available to said mobile telephone.

20. The mobile telephone according to Claim 19, wherein said NUM_SO field further includes at least one SERVICE_OPTION field, wherein each SERVICE_OPTION field indicates a service option supported by said mobile telephone.